4.7 HYDROLOGY AND WATER QUALITY

4.7.1 Setting

a. Countywide Hydrology. Several major watercourses are located throughout the county including, but not limited to: the Salinas River, Estrella River, Huerhuero Creek, Santa Rosa Creek, Morro Creek, San Luis Obispo Creek, Arroyo Grande Creek, Nipomo Creek, Chorro Creek and their tributaries. Rural areas as well as a significant amount of urban development surround these and other watercourses throughout the county.

The San Luis Obispo Creek and Arroyo Grande Creek watersheds are the most heavily urbanized areas within the county. During flood events, these watercourses can carry large amounts of debris and have the potential to cause significant property damage within the urbanized areas of the San Luis Bay (coastal and inland), San Luis Obispo, and Huasna-Lopez planning areas. Arroyo Grande Creek flood storage south of the City of Arroyo Grande has ~~reached~~ nearly 85 percent reduced capacity due to heavy siltation caused by surrounding development. Santa Rosa Creek is a steep gradient creek that has a history of flooding the community of Cambria. The Salinas River, although adjacent to several communities, is generally contained within its river channel during storm events.

b. Drainage Problems and Generalized Flood Hazards. Development adjacent to or near surface water is subject to specific design and construction conditions to ensure a project's surface water is adequately contained and directed offsite. Drainage problems exist in localized areas of the county due to site topography, soil conditions, and adjacent development. The County Public Works Department has completed drainage studies for specific known problem areas of the county. As a result, the County Board of Supervisors approved funding for Drainage and Flood Control Studies for the communities of Cambria, Cayucos, Nipomo, Oceano, San Miguel, and Santa Margarita.

Development resulting from the proposed program would occur in rural areas of the county. In general, drainage within rural areas is less of a concern, as the intensity of development is substantially lower. As a result of the lower development intensity, less land area is devoted to impervious surfacing and most natural drainage courses in the rural area have been retained.

c. FEMA Floodplains. Flood Insurance Rate Maps determine areas of 100-year flooding and divide the county into eleven Flood Hazard zones: Zone A, base flood elevations not determined; Zone AE, AH and AO, base flood elevations determined; Zone AR, Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified; Zone A99, area to be protected from 1% annual chance flood by a Federal flood protection system under construction, no Base Flood Elevations determined; Zone V, coastal flood zone with velocity hazard (wave action), no Base Flood Elevations determined: Zone VE, Coastal flood zone with velocity hazard (wave action), Base Flood Elevations determined: Zone X (shaded), areas of 0.2% annual chance flood, areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood; Zone X (unshaded),

areas determined to be outside the 0.2% annual chance floodplain; Zone D, areas in which flood hazards are undetermined, but possible. The National Flood Insurance Program 100-year floodplain is considered to be the base flood condition. The 100-year flood, also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. Floodways are defined as stream channels plus adjacent floodplains that must be kept free of encroachment as much as possible so that 100-year floods can be carried without damage causing increases in flood elevations. The County assigns a "Flood Hazard" (FH) combining designation to projects located in areas prone to flooding. These areas are subject to County Code requirements established in Section 22.14.060 of the Land Use Ordinance (for inland portions of the county) and Section 23.07.060 et seq. of the Coastal Zone Land Use Ordinance (for sites in the Coastal Zone).

d. Water Quality. The issue of surface water quality in the county is important for maintaining safe water supplies, protecting the habitat value of the county's creeks and tributaries, including habitat for several endangered or threatened plant and animal species, and other "beneficial uses" listed in Table 4.7-2. Other important Surface water entering watercourses from undeveloped and undisturbed areas usually travels over vegetative cover before reaching a watercourse. As a result, the hydrological conditions in these areas allows more eroded material and other potential contaminants to be filtered out before reaching surface waters.

As these undeveloped areas become developed, the hydrologic conditions become modified. New development generally results in an increase in impervious surfacing (e.g. pavement, structures, etc.) on a site. Impervious surfacing can result in the following hydrologic changes:

- Increased flooding frequency and magnitude;
- Increased erosion of streams and hillsides;
- Alteration in the stream's hydrograph;
- Increased pollutant concentration levels in stormwater runoff; and
- Reduced groundwater recharge rates.

These changes could have the effect of physically modifying streams or other watercourses. For example, reduced groundwater recharge could cause stream underflows to recharge an aquifer, thereby reducing the surface water flows. Similarly, erosion and sedimentation could cause alterations in stream depth, width, and course. Physical modification to watercourses is collectively known as "hydromodification." Measures to reduce factors that cause these physical modifications are referred to as "hydromodification control."

Urbanized areas typically contain pollutants on the ground surface that are harmful to water quality and natural ecosystems. These include heavy metals, hydrocarbons, detergents, fertilizers, and pesticides that originate from vehicle use and commercial and residential land use activities. For the most part, these pollutants are associated with sediments that collect on roadways and are flushed into the creek systems either in dry weather flows, during construction, or by rainfall. Construction activities also create erosion and cause sediment to be transported off-site by surface water runoff over the construction site. Therefore, water quality depends primarily on the hydrologic characteristics of the drainage basin, the makeup of the soils in the watershed, and sources of pollution in the watershed. The quality of stormwater

varies in the county depending on climatic and land use conditions. Urban and industrial runoff generally contains more pollutants than rural runoff.

San Luis Obispo County Impaired Water Bodies. Section 303(d) of the federal Clean Water Act requires states to identify waters that do not meet water quality standards after applying effluent limits for point sources (other than publicly owned treatment works) that are based on the best practicable control technology currently available. States are then required to prioritize waters/watersheds for total maximum daily loads (TMDL) development. A TMDL is a written plan that describes how an impaired water body will meet water quality standards. It contains the following:

- A measurable feature to describe attainment of the water quality standards;
- A description of required actions to remove the impairment; and
- An allocation of responsibility among dischargers to act in the form of actions or water quality conditions for which each discharger is responsible.

The Clean Water Act requires that states develop rankings for TMDLs. California ranks TMDLs as high, medium or low priority based on a number of factors including the severity of the impairments and the importance of the specific beneficial uses identified for that water body. Regional Boards develop schedules that set the order for TMDL completion.

States are to compile this information in a list and submit the list to USEPA for review and approval. This list is known as the 303(d) list of impaired waters. The State Water Resources Control Board (SWRCB) and Regional Water Quality Control Boards (RWQCB) monitor and assess water quality to prepare the Section 303(d) list and to develop TMDLs (RWQCB, 2006). Surface waters of the county that are on the 303(d) list for specific constituents are shown in Table 4.7-1 Special precautions such as Stormwater Pollution Prevention Plans (SWPPP) and construction site Best Management Practices (BMPs) must be implemented where drainage and stormwater runoff impacts any of these county surface water bodies.

Table 4.7-1: San Luis Obispo County 303(d) List of Impaired Waters

Waterway	Constituent/ Pollutant	Potential Sources	Proposed TMDL Completion	Notes
Alamo Creek	Fecal Coliform	Agricultural, Natural Sources, Range Grazing – Riparian and/or Upland	2008	1
Atascadero Creek	Fecal Coliform	Source Unknown	2019	3
	Low Dissolved Oxygen	Source Unknown	2019	
Cholame Creek	Boron	Source Unknown	2019	1
	Fecal Coliform	Agriculture, Natural Sources, Nonpoint Source, Pasture Grazing – Riparian and/or Upland	2019	
Chorro Creek	Nutrients	Agriculture, Agriculture storm runoff, Irrigated Crop Production, Municipal Point Sources	2005	3
	Oxygen, Dissolved	Source Unknown	2019	
Las Tablas Creek	Metals	Surface Mining	2019	3
Los Osos Creek	Low Dissolved Oxygen	Agriculture, Natural Sources, Pasture Grazing – Riparian and/or Upland, Urban Runoff/Storm Sewers	2015	3

Table 4.7-1: San Luis Obispo County 303(d) List of Impaired Waters

Waterway	Constituent/ Pollutant	Potential Sources	Proposed TMDL Completion	Notes
Morro Bay	Oxygen, Dissolved	Source Unknown	2019	3
Nacimiento Reservoir	Metals	Surface Mining, Natural Sources	2019	3
Nipomo Creek	Fecal Coliform	Agriculture, Urban Runoff/Storm Sewers, Natural Sources	2008	3
Oso Flaco Creek	Ammonia (Unionized)	Source Unknown	2019	2
	Fecal Coliform	Source Unknown	2008	
	Nitrate	Source Unknown	2015	
Oso Flaco Lake	Dieldrin	Source Unknown	2019	2
	Nitrate	Agriculture, Nonpoint Source	2015	
Salinas River (upper, confluence of Nacimiento River to Santa Margarita Reservoir)	Chloride	Agriculture, Pasture Grazing-Riparian and/or Upland, Urban Runoff/Storm Sewers	2019	3
	Sodium	Agriculture, Pasture Grazing-Riparian and/or Upland Urban Runoff/Storm Sewers	2019	
San Luis Obispo Creek	Nitrate as Nitrate (NO3)	Source Unknown	2019	3
	Nutrients	Municipal Point Sources, Agriculture, Irrigated Crop Production, Agriculture-storm runoff	2005	
Santa Maria River	Ammonia (Unionized)	Source Unknown	2019	2
	Chlorpyrifos	Source Unknown	2015	
	DDT	Source Unknown	2015	
	Dieldrin	Source Unknown	2015	
	Endrin	Source Unknown	2015	
	Fecal Coliform	Agriculture, Pasture Grazing-Riparian and/or Upland, Urban Runoff/Storm Sewers, Natural Sources	2008	
	Nitrate	Agriculture, Pasture Grazing-Riparian and/or Upland, Urban Runoff/Storm Sewers	2015	

Source: *Regional Water Quality Control Board 303(d) list, 2006. Board Approved List.*
http://www.swrcb.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/swrcb/r3_final303dlist.pdf

Notes

1. *This waterbody is not anticipated to be affected by the Agricultural Cluster Subdivision Program, because its watershed is entirely beyond 5 road miles from an Urban Reserve Line.*
2. *This waterbody is not anticipated to be affected by the Agricultural Cluster Subdivision Program, because the Oso Flaco and Santa Maria Valleys are excluded from the program.*
3. *This waterbody or its tributaries could be potentially affected by the Agricultural Cluster Subdivision Program, because an agricultural cluster subdivision could be located within its watershed.*

Beneficial Use. Streams, lakes, rivers, and other water bodies have uses to humans and other life. These uses, or "beneficial uses," are outlined in a Water Quality Control Plan, also called the Basin Plan of the Central Coast Region. There are 24 categories of beneficial uses, including but not limited to water contact recreation, non-water contact recreation, municipal water supply, and cold fresh water habitat. Each body of water in the state has a set of beneficial uses it supports that may or may not include all 24. Different beneficial uses require different water quality control. Therefore, each beneficial use has a set of water quality objectives designed to protect that beneficial use. Table 4.7-2 defines beneficial surface water uses typically found in the county.

Table 4.7-2: Definitions of Beneficial Uses for Surface Waters

Abbreviation	Beneficial Use	Definition
MUN	Municipal & Domestic Water Supply	Community, military, or individual water supply systems including, but not limited to, drinking water supply.
AGR	Agricultural Supply	Farming or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for grazing.
PROC	Industrial Process Supply	Uses of water for industrial activities that depend primarily on water quality (i.e., waters used for manufacturing, food processing, etc.).
IND	Industrial Service Supply	Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, or oil well repressurization.
GWR	Ground Water Recharge	Natural or artificial recharge of ground water for purpose of future extraction or maintenance of water quality.
FRSH	Freshwater Replenishment	Uses of water for natural or artificial maintenance of surface water quantity or quality (e.g., salinity) which includes a water body that supplies water to a different type of water body, such as, streams that supply reservoirs and lakes, or estuaries; or reservoirs and lakes that supply streams. This includes only immediate upstream water bodies and not their tributaries.
NAV	Navigation	Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels. Any stream, lake, arm of the sea, or other natural body of water that is actually navigable and that, by itself, or by its connections with other waters, for a period long enough to be of commercial value, is of sufficient capacity to float watercraft for the purposes of commerce, trade, transportation, and including pleasure; or any waters that have been declared navigable by the Congress of the United States and/or the California State Lands Commission.
POW	Hydropower Generation	Uses of water for hydropower generation.
REC1	Water Contact Recreation	Recreational activities involving body contact with water, where ingestion of water is reasonably possible. Example: swimming, fishing, and wading.
REC2	Non-Contact Water Recreation	Recreational activities close to water, but not normally involving body contact with water. Example: picnicking, hiking, and boating.
AQUA	Aquaculture	Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.
WARM	Warm Freshwater Habitat	Warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, and fish or wildlife.
WILD	Wildlife Habitat	Terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, and wildlife.
COLD	Cold Freshwater Habitat	Cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish or wildlife.
SAL	Inland Saline Water Habitat	Uses of water that support inland saline water ecosystems including, but not limited to, preservation or enhancement of aquatic saline habitats, vegetation, fish, or wildlife, including invertebrates.
EST	Estuarine Habitat	Uses of water that support estuarine ecosystems including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds).
MAR	Marine Habitat	Uses of water that support marine ecosystems including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).
SPWN	Spawning Habitat	High quality habitats suitable for reproduction or early life stages of fish. This use is applicable only for the protection of anadromous fish.
RARE	Rare, Threatened, or Endangered Species	Habitats necessary for the survival of plant and animal species identified under state or federal law as rare, threatened, or endangered.
COMM	Commercial & Sport Fishing	Commercial or recreational collection of fish or other organisms including, but not limited to, uses of the organism for human consumption or bait.

Table 4.7-2: Definitions of Beneficial Uses for Surface Waters

Abbreviation	Beneficial Use	Definition
WILD	Wildlife Habitat	Uses of water that support terrestrial ecosystems including, but not limited to, preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.
BIOL	Preservation of Biological Habitats of Special Significance	Uses of water that support designated areas or habitats, such as established refuges, parks, sanctuaries, ecological reserves, or Areas of Special Biological Significance (ASBS), where the preservation or enhancement of natural resources requires special protection.
RARE	Rare, Threatened, or Endangered Species	Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened, or endangered.
MIGR	Migration of Aquatic Organisms	Uses of water that support habitats necessary for migration or other temporary activities by aquatic organisms, such as anadromous fish.
SHELL	Shellfish Harvesting	Uses of water that support habitats suitable for the collection of filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sport purposes. This includes waters that have in the past, or may in the future, contain significant shellfisheries.
ASBS	Area of Special Biological Significance	Those areas designated by the State Water Resources Control Board as requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable.

Source: Central Coast Regional Water Quality Control Board, Water Quality Control Plan.

Water Quality Objectives. Water quality objectives are the limits or levels of water quality constituents or the characteristics of a water body that are established for the reasonable protection of beneficial uses of water. Water quality objectives are numeric limits and narrative objectives designed to ensure that bodies of water in the state can support their designated beneficial uses. At concentrations equal to or greater than numeric objectives, constituents (or pollutants) are considered to have impaired the beneficial uses of the state's water. Sometimes, the objectives are narrative, which are qualitative objectives. A narrative objective in the Basin Plan might state, "Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths…" With this narrative objective, the actual numeric limit for the concentration is not articulated. Table 4.7-3 provides water quality objectives for potential releases of pollutants into county surface waters.

Table 4.7-3: Water Quality Objectives for Beneficial Uses of Surface Waters

Beneficial Uses	Constituent	Objective
MUN, AGR, REC-1, REC-2, COLD, WARM	pH	6.5 to 8.3. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters.
MUN	Organic Chemicals	Shall not exceed organic chemical concentrations in excess of the limiting concentrations set forth in the California Code of Regulation, Title 22.
MUN, AGR, WARM	Chemical Constituents	Shall not exceed chemical concentrations in excess of the limiting concentrations set forth in the California Code of Regulations, Title 22 nor contain concentrations known to be deleterious to fish or wildlife.
MUN	Phenol	Water shall not contain phenol in concentrations of 1.0micro grams per liter.
AGR, COLD, WARM, SPWN	Dissolved Oxygen	Dissolved oxygen shall not be reduced to below 7.0 mg/l at any time.
REC-1, REC-2, SHELL	Bacteria	Fecal Coliform concentrations shall not exceed a log mean of 200/100 ml.
COLD, WARM	Temperature	At no time shall the temperature be increases by more than 5 degrees Fahrenheit above natural receiving temperatures.
MUN	Aluminum	Maximum contaminant level 1mg/l
MUN	Arsenic	Maximum contaminant level 0.05 mg/l
MUN	Barium	Maximum contaminant level 1 mg/l
SPWN, MUN	Cadium	Cadium shall not exceed 0.003 mg/l in hard water or 0.0004 mg/l in soft water at any time. (hard water is defined as water exceeding 100mg/l $CaCO_3$.
SHELL, MUN	Chromium	The maximum value is 0.01mg/l
MUN	Lead	Maximum contaminant level is 0.05mg/l
MUN	Mercury	Maximum contaminant level is 0.002mg/l
MUN	Nitrate (NO_3)	Maximum contaminant level is 45mg/l
MUN	Selenium	Maximum contaminant level is 0.01mg/l
MUN	Silver	Maximum contaminant level is 0.05mg/l
All	Biological Oxygen Demand (BOD)	Water shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
All	Chemical Oxygen Demands (COD)	Water shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
All	Total Dissolved Solids (TDS)	Dischargers of waters or wastewater shall not increase the TDS content of receiving waters unless it can be demonstrated to the RWQCB that an increase in TDS does not adversely impact beneficial uses.
All	Total Suspended Solids (TSS)	Waters shall not contain suspended material in concentrations that cause nuisance or adversely affects beneficial uses.
All	Turbidity	Waters shall be free of change in turbidity that cause nuisance or adversely affect the beneficial uses.

Source: *Central Coast Regional Water Quality Control Board, Water Quality Control Plan.*

e. Regulatory Setting. Surface water and groundwater resources and their associated water quality are regulated in California through many different applicable laws, regulations and ordinances administered by local, state and federal agencies. The U.S. Army Corps of Engineers, San Luis Obispo County Flood Control District, California Department of Water Resources, and Central Coast RWQCB are the primary agencies responsible for the protection of watersheds, floodplains, and water quality. These agencies ensure that the hydrologic characteristics of surface water and groundwater are considered, so that the existing identified beneficial uses are not impaired. Similarly, water quality regulations are designed to limit the discharge of pollutants to the environment, maintain surface water and groundwater quality, protect fish and wildlife and their habitats, and protect beneficial uses.

Federal and State Policies and Regulations. Federal and State agencies have jurisdiction over specific activities conducted in or connected to drainages, stream channels, wetlands and other water bodies. The federal government supports a policy of minimizing "the destruction, loss or degradation of wetlands" (Executive Order 11990, May 24, 1977). The U.S. Army Corps of Engineers (ACOE) and the U.S. Environmental Protection Agency (EPA) regulate the placement of dredged and fill material into "Waters of the United States," including wetlands, under section 404 of the Clean Water Act (CWA). Un-vegetated stream channels, mud flats, and open water such as ponds and lakes are not considered wetlands but do fall under the ACOE and EPA jurisdiction under Section 404 of the CWA as "other waters of the United States." The jurisdictional limits of stream channels and lakes are delineated, in the absence of adjacent wetlands, at the average high-water mark. For all work subject to a 404 permit, project proponents must obtain either a certification or a waiver from the RWQCB stating that the project would comply with applicable water quality regulations. In addition to the CWA permits, a Fish and Game 1602 Streambed Alteration Permit may also be required depending on the specific activity.

The State Department of Water Resources is responsible for coordinating flood prevention activities and is authorized to receive requests from public agencies for assistance during floods. Should flooding occur, these agencies would have policies and regulations with respect to how flooding hazards would need to be managed. The Federal Emergency Management Agency (FEMA) establishes base flood heights for 100-year and 500-year flood zones.

Since 1990, regulations have increasingly emphasized the control of water pollution from non-point sources, which include stormwater systems and runoff from point-source construction sites and industrial areas. In California, the State Water Resources Control Board (SWRCB) issued a statewide General Permit to regulate runoff from construction sites involving grading and earth moving in areas over one acre and projects less than one acre that are part of a common development. In limited cases, waivers may be available (e.g. conditional agricultural waiver, rainfall erosivity waiver, etc.). The SWRCB is acting to enforce requirements of the federal Clean Water Act, pursuant to regulations issued by the U.S. EPA for the National Pollutant Discharge Elimination System. This State Order (Water Quality Order 2009-0009-DWQ) requires construction projects covered under the General Permit to use the "best available technology economically achievable (BAT)," and the "best conventional pollution control technology (BCT)." Each construction project subject to the permit is required to have a Stormwater Pollution Prevention Plan (SWPPP) prepared, which identifies likely sources of sediment and pollution and incorporates measures to minimize sediment and pollution in runoff water. These objectives are established based on the designated beneficial uses (e.g. water supply, recreation, and habitat) for a particular surface water or groundwater. Requirements under the General Permit vary dependent upon the assigned risk level, which is based upon two variables:

- *Sediment risk*, which is based on factors such as soil erosivity and annual precipitation levels.
- *Receiving water risk,* which is assumed to be low; risk is considered to be high only if the receiving waters have any of the following characteristics:
    - On the 303(d) list as an impaired water body (refer to Table 4.7-1); or
    - Subject to a United States Environmental Protection Agency (USEPA) approved Total Maximum Daily Load (TMDL) implementation plan for sediment; or

- Has a beneficial use of COLD, SPWN, and MIGR (refer to Table 4.7-2).

Table 4.7-4: Risk Level Assessment

		Sediment Risk		
		LOW	MEDIUM	HIGH
Receiving Water Risk	LOW	**LEVEL 1**	**LEVEL 2**	
	HIGH	**LEVEL 2**		**LEVEL 3**

Table 4.7-5: Requirements Based on Risk Level

REQUIREMENT	LEVEL 1	LEVEL 2	LEVEL 3
Risk assessment	✓	✓	✓
SWPPP	✓	✓	✓
Annual report	✓	✓	✓
Visual monitoring	✓	✓	✓
Non-visible monitoring	as needed	as needed	as needed
Effluent sampling		✓	✓
Receiving water sampling			✓
Monitoring standard	n/a	NAL	NEL

Under Phase Two of the National Pollutant Discharge Elimination System (NPDES), the County sought coverage under the SWRCB's General Permit for Municipal Separate Storm Sewer Systems (MS4s). In order to gain coverage under this permit, the County produced a Stormwater Management Program (SWMP). The SWMP, which is active from March 2007 to March 2012, outlines various practices that the County will implement over this five-year time span in order to reduce discharges into the stormwater conveyance system.

In October 2009, the RWQCB provided a letter to all MS4 jurisdications in the Central Coast Region (Region 3) asserting that jurisdictions must develop hydromodification control criteria and measures, and immediately adopt interim measures. In lieu of this, the RWQCB presented the option for a "joint effort" of MS4 jurisdictions, which would collaborate on the development of hydromodification control standards over a two-year period. This effort is in the process of being initiated, and it is anticipated that hydromodification control policies will have been developed and implemented by the end of 2012.

Existing Local Policies and Regulations. Chapter 22.52 (Inland) and Chapter 23.05 (Coastal) contain site development standards for County projects, including drainage, grading, and erosion and sedimentation control. Modifications to these standards were adopted by the Board of Supervisors in April 2010 and have gone into effect in the inland portion of the county. Modifications affecting the Coastal Zone are pending action by the California Coastal Commission.

Grading plans are required for any project involving 50 cubic yards of earth movement or an acre of vegetation removal. When required, grading plans must meet with the content requirements and design standards established in Chapter 22.52 of the Land Use Ordinance and Chapter 23.05 of the Coastal Zone Land Use Ordinance (hereafter referred to as "grading ordinances"). Engineered grading plans are required for projects involving disturbance of 5,000 or more cubic yards of material, located on twenty percent slopes or greater, or located in a designated Geologic Study Area or Flood Hazard combining designation. Projects sites where development will occur within the 100-year flood zone must have specific design considerations to ensure the structure is adequately protected, as defined in Section 22.14.60 (Inland) and Section 23.07.066 (Coastal).

Grading must follow the standards provided in the 1997 Uniform Building Code (Appendix Chapter 33) and the following standards:

- Areas of cut and fill are to be limited to the minimal amount necessary.
- Grading for a building site is prohibited on slopes of 30% or greater.
- Contours are to be blended with the natural terrain.
- Grading may not alter watercourses except as permitted through the Department of Fish and Game and various watercourse protection methods shall be followed.
- Areas where natural vegetation has been removed must be replanted by various approved methods.

The grading ordinances include provisions for the preparation of a drainage plan. Drainage plan design and construction standards function to minimize harmful effects of stormwater runoff and resulting inundation and erosion on proposed projects, and to protect neighboring and downstream properties from drainage problems resulting from new development. Applicants for building permits are required by this ordinance to develop a drainage plan for their project unless site and project characteristics are such that drainage impacts would be negligible. When required, the drainage plan is to include finished contours of the project, the location and design of any proposed facilities for storage or conveyance of runoff into drainage channels, including sumps, basins, channels, culverts, ponds, storm drains, and drop inlets, estimates of existing and increased runoff resulting from the proposed improvements, identification of existing and proposed drainage channels, facilities for storage or conveyance of runoff, erosion and sedimentation control measures, and proposed flood-proofing measures.

The grading ordinances require submittal of a drainage plan for projects that:

- Increase or decrease runoff volume or velocity leaving the site beyond those that existed prior to site disturbance;
- Involve land disturbance of more than 20,000 square feet;
- Will result in an impervious surface of more than 20,000 square feet;
- Is subject to local ponding due to soil or topographic conditions;
- Is located in an area with a history of flooding or erosion that may be further aggravated by or have a harmful effect on the projector adjoining properties;
- Is located within a Flood Hazard combining designation;
- Is located over a known high recharge area;

- Involves land disturbance or placement of structures within 100 feet of the top bank on any watercourse shown with a blue line; or
- Involves hillside development on slopes steeper than 10 percent.

In 2003, a comprehensive watershed management plan was developed for the San Luis Obispo Creek Watershed. The plan is a collaboration between the County and the City of San Luis Obispo. The watershed encompasses the San Luis Obispo and Avila Valley areas and their surroundings. Within the San Luis Obispo Creek watershed, project drainage design must comply with the Drainage Design Manual, which is a component of the San Luis Obispo Creek Waterway Management Plan. Measures in the Drainage Design Manual are intended to meet several stated objectives:

- To control flooding;
- To maintain flood water surface elevations;
- To maintain hydraulic stability in San Luis Obispo Creek and its tributaries;
- To preserve biological resources; and
- To protect and improve water quality.

In addition to the requirements above, several specific areas of the county require submittal of a drainage plan due to soil conditions, existing problems, and general area concerns. Areas requiring drainage plan submittal regardless of site conditions include: most of Los Osos, Palo Mesa, Cambria, and most of Nipomo. Other areas of concern that often require the submittal of a drainage plan include the Arroyo Grande fringe where existing ditches built by the Works Progress Administration often require cleaning of sediment and debris; Cayucos/Morro Strand adjacent to the coast; Cabrillo Estates in Los Osos, which is sited on an active sand dune with several areas of steep slopes; and areas below the 825 foot flood elevation at Lake Nacimiento. Drainage, Erosion, and Sedimentation Control plans may also be required in other areas following review of site conditions during the environmental review of a project.

As part of the County's Stormwater Management Program, the County was required to amend local ordinances to comply with "Attachment 4" post-construction standards. These standards were established by the SWRCB in the General Permit for MS4s. In April 2010, the Board of Supervisors adopted the Stormwater Management Ordinance, which is housed in Section 22.10.155 (Inland) and Section 23.04.450 (Coastal). The inland ordinance is presently in effect; the coastal ordinance is pending action by the California Coastal Commission. The Stormwater Management Ordinance focuses on post-construction stormwater management, which is intended to filter pollutants generated from the long-term operation of a use. The following uses are subject to the Stormwater Management Ordinance:

- Single family residences, on slopes of 10 percent or greater;
- Commercial or multi-family residential development involving 100,000 square feet of impervious surfacing;
- Residential subdivisions which could result in 10 or more units;
- Automobile service stations and vehicle repair;
- Restaurants; and
- Parking lots or outdoor storage lots exceeding 5,000 square feet or 25 spaces;

These uses are required to prepare fill out a Stormwater Quality Plan (SWQP) application and detail proposed Low Impact Development (LID) source control or treatment control Best

Management Practices (BMPs). Design measures, such as preserving sensitive habitats and reducing impervious surfacing, are also required. Long-term maintenance of structural BMPs is to be facilitated through Covenants, Conditions, and Restrictions (CC&Rs) or through a mitigation agreement to be recorded on title.

Ordinance revisions addressing stormwater pollution from construction-based sources and long-term (i.e. post-construction) operational use of facilities have already been adopted and are in effect in the inland portion of the county. These ordinance amendments are pending Coastal Commission review and approval before they take effect in the Coastal Zone. In addition to construction-phase and post-construction pollution prevention, the County's SWMP also requires regulations concerning illicit discharge – or discharge of non-stormwater pollutants into the stormwater conveyance system. An example of a non-stormwater discharge would be dumping of oils or solvents into a storm drain. Less obvious examples of non-stormwater pollutants could include pet waste or soaps from washing a car. The County's illicit discharge ordinance regulating certain non-stormwater pollutants is not presently in effect, due to pending litigation. The County released a Notice of Preparation of an Environmental Impact Report for re-adoption of the illicit discharge ordinance in July 2010. Adoption of the illicit discharge ordinance is a requirement under the County's SWMP, and a condition of its coverage under the MS4 General Permit. All SWMP conditions must be met before a new SWMP is to take effect in March 2012. Therefore, imposition of illicit discharge restrictions at the county-level is reasonably foreseeable.

Erosion and sedimentation control to protect damaging effects on-site and on adjoining properties is addressed in the grading ordinances. An erosion and sedimentation control plan is required for most development and site disturbance activities, year round. The plan must discuss temporary and final measures including:

- Slope surface stabilization including temporary mulching or other stabilization measures to protect exposed areas of high erosion potential during construction and interceptors and diversions at the top of slopes to redirect runoff;
- Erosion and sedimentation control devices such as absorbing structures or devices to reduce the velocity of runoff;
- Final long-term erosion control measures including mechanical or vegetative measures.

In April 2010, the Board of Supervisors adopted an ordinance provision requiring that applicants submit Stormwater Pollution Prevention Plans (SWPPPs) to the County for review, approval, and enforcement. SWPPPs focus on addressing construction-related pollutant discharges, primarily related to grading (e.g. erosion and sedimentation). SWPPPs are only to be submitted to the County when coverage under the SWRCB's General Construction Permit is already required (e.g. when disturbing one acre of land). Under State law, the applicant must appoint a qualified SWPPP practitioner to inspect, monitor, and repair BMPs throughout the life of the project. Reports are then to be submitted both to the State (by way of the "SMARTS" online application) and to the County. This method ensures that a qualified party is guiding the construction process to minimize discharge of pollutants into the stream system, and enables governmental enforcement to focus on the more egregious violations. Reported violations are investigated by the local RWQCB, in coordination with the County. Practitioners who fail to report violations of the SWPPP and General Construction Permit standards could face severe fines and penalties.

4.7.2 Impact Analysis

a. Methodology and Significance Thresholds. An impact would occur if development resulting from the Agricultural Cluster Subdivision Program occurred in areas with existing drainage concerns. Potential impacts would be assessed based on site topography, the proposed layout and elevations of potential project components, the erodibility of soils, and the regulatory framework necessary for the project.

With respect to water quality, determining significance is more indirect because there are no specific discharge requirements or standards for stormwater runoff that can be compared at this time. For the purposes of this EIR, the determination of significance is based on a review of typical construction site pollutants usually found on job sites that might contribute to disproportionate amounts of polluting materials in runoff.

Effective July 2010, the State Water Resources Control Board (SWRCB) has established two numerical thresholds:

- *Numerical Action Level (NAL).* The NAL is the threshold at which point the SWPPP practitioner must take an action to improve BMP performance. NAL exceedence occurs when acidity (pH) levels fall outside of the acceptable range of 6.5 to 8.5 pH units, or when turbidity exceeds 250 Nephelometric Turbidity Units (NTUs). When NALs are exceeded, action must be taken; failure to take action is a violation of the Construction General Permit.
- *Numeric Effluent Limitations (NEL).* The NEL is the threshold at which point the project is in violation of the Construction General Permit. NEL exceedence occurs when acidity (pH) levels fall outside of the acceptable range of 6.0 to 9.0 pH units, or when turbidity exceeds 500 NTUs.

Additionally, the General Order contains narrative restrictions referencing best available technology economically achievable and the best conventional pollution control technology. Thus, the significance of water quality impacts will be judged in terms of conformance with these requirements.

In accordance with Appendix G of the *State CEQA Guidelines*, impacts would be considered significant if development under the Agricultural Cluster Subdivision Program would result in the any of the following:

<u>Water Quality Impacts:</u>

- *Violate Regional Water Quality Control Board water quality standards or waste discharge requirements.* Refer to Impacts HWQ-3 and HWQ-6, below.
- *Otherwise substantially degrade water quality.* Refer to Impacts HWQ-3 and HWQ-6.
- *Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map*. Refer to Impact HWQ-4, below.

Groundwater Impacts:

- *Substantially deplete groundwater supplies*[1] *or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (i.e., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted).* Refer to Impact HWQ-1, below.

Hydrology Impacts:

- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.* Refer to Impacts HWQ-2 and HWQ-3, below.
- *Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site.* Refer to Impact HWQ-1, below.
- *Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.* Refer to Impact HWQ-5, below.
- *Place development within a 100-year flood hazard area structures which would impede or redirect flood flows.* Refer to Impact HWQ-4, below.
- *Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam.* Refer to Impact HWQ-4, below.

Emergency Response Impacts:

- *Inundation by seiche, tsunami, or mudflow.* Refer to Section 4.13: Effects Found Not to be Significant.

b. Project Impacts and Mitigation Measures.

Impact HWQ-1 **Development resulting from the Agricultural Cluster Subdivision Program could alter drainage conditions, such as volume, velocity, direction, peak flow, soil absorption. Alteration of drainage conditions could result in physical alteration of drainage courses ("hydromodification"). Compared to the existing ordinance, the program would reduce the potential for hydromodification to occur. Impacts compared to the existing ordinance would therefore be Class III, *less than significant*. Compared to existing conditions, new development could result in hydromodification. Impacts compared to existing conditions would therefore be Class II, *significant but mitigable*.**

[1] The discussion in this section focuses on potential reductions in groundwater recharge due to increased impermeable surfaces. Refer to Section 4.12, Water Resources, for a discussion on impacts related to groundwater supplies.

Compared to Development Potential under the Existing Ordinance

When compared to development potential under the existing ordinance, the proposed amendments would reduce the number of residential cluster parcels that could potentially be created in the county from 4,582 to 418, a 91 percent reduction. The program would also introduce the Agricultural Cluster Subdivision Program into the Coastal Zone; however, the coastal version of the program would only authorize the reconfiguration of existing underlying lots into residential cluster lots, essentially replacing current lot line adjustment procedures with more restrictive agricultural clustering standards.

When comparing the specific standards of the existing ordinance with the Agricultural Cluster Subdivision Program, there are both positive and negative aspects:

- *Positive Aspects*
    - Residential density will be decreased, which could result in less impervious surfacing overall.
    - Requiring a 2.5 acre minimum parcel size will afford parcels with ample space in which to incorporate Low Impact Development (LID) design features, which may lessen drainage impacts.
    - Requiring 2.5 acre minimum parcel sizes means that development will occur at less urban-like levels. Under the present inland ordinance, 10,000 square foot parcels can occur. When developing with larger parcels, the likelihood of directly connected impervious areas (DCIAs) decreases. An example of a DCIA would be having a cement slab connect to a driveway, then to a street. DCIAs result in concentrated, high volume, high velocity runoff.

- *Negative Aspects (potential impacts)*
    - The minimum parcel size for clustered parcels will be increasing from 10,000 square feet to 2.5 acres. This will result in more dispersed residential development. As a result, impervious surfacing for driveways and roadways may increase.
    - Clusters are required to be in a single clustered envelope unless environmental circumstances necessitate a second envelope. This means that residential development will occur within comparatively close proximity to one another. As a result, directly connected impervious areas may be more likely.

Despite the potential negative effects discussed above, due to reduced development potential, the Agricultural Cluster Subdivision Program would result in Class III, *less than significant*, impacts when compared to the existing ordinance.

Compared to Existing Conditions

The Agricultural Cluster Subdivision Program will allow clustering of residential development on agricultural lands. As a result, residential development will occur at a greater density over a small portion of the site, with a much larger portion of the site being maintained in agricultural production or preserved as open space. Development on each of the clustered residential parcels is generally anticipated to include a single-family residence with ancillary uses (e.g.

garage, workshop, guesthouse, etc.). Preparation of the land for development will generally require a County Grading Permit and drainage plan review.

The Agricultural Cluster Subdivision Program will have the effect of changing the manner in which residential development can occur on agricultural lands. Although the overall residential density will not be increased beyond what is already anticipated in the County General Plan, the ability to cluster the residences could affect overall drainage patterns. Altering topography and increasing impervious surfacing can affect drainage patterns in the following manners:

- *Volume* – The volume of drainage could be altered. In general, the volume of drainage is increased when impervious surfacing is added, because there is a reduction in surface area where runoff could percolate to the groundwater table. Similarly, if topography is substantially altered, the volume of water a drainage course receives could be reduced if drainage is re-routed using an alternative drainage course.
- *Velocity* – Adding impervious surfacing and/or channelizing drainage can have the effect of increasing the velocity of runoff. Increased velocity can hasten erosion and sedimentation. Additionally, it can affect the natural features of the drainage course.
- *Direction* – Altering the topography and adding engineered drainage devices can change the direction of drainage. This could result in physical modification to drainage courses and potential impacts to down-gradient properties.
- *Peak Flow* – Peak flow is the longevity and volume of the flow occurring during and after a storm event. When topography is altered and drainage devices are installed, the peak volume and the longevity of the flow can be modified (i.e. alteration of the hydrograph). A common alteration of peak flow occurs with the installation of retention basins. The basins reduce the peak volume, but increase the longevity of large flows. Altering peak flows can cause physical changes to drainage courses.
- *Soil Absorption* – Soil naturally absorbs some stormwater. Activities such as the introduction of impervious surfacing or the removal of topsoil can alter the ground's ability to absorb stormwater flows.

Implementation of mitigation for future agricultural cluster projects would control flow volume and velocity, flow direction, peak flow, and soil absorption through Low Impact Development measures and techniques, such as bio retention basins, vegetated swales, and porous paving systems. Therefore, with incorporation of these measures, impacts would be Class II, *significant but mitigable.*

Mitigation Measures.

HWQ-1(a) **Project-Specific Review for Low Impact Development.** All agricultural cluster subdivision projects will be subject to California Environmental Quality Act (CEQA) review. As part of the CEQA review process, projects shall be reviewed to ensure appropriate Low Impact Development (LID) measures and techniques, also known as Best Management Practices (BMPs), have been incorporated to avoid hydromodification impacts. Examples of LID measure to be considered include, but are not limited to: rain gardens, vegetated swales, bio-

retention systems, infiltration planters, soil amendments, down-spout connections, reduced roadway surface (where permitted), porous paving systems, open-cell block pavers, porous turf pavement, and rain water harvesting.

Residual Impacts. When compared to development potential under the existing ordinance, impacts would be Class III, *less than significant.* When compared to existing conditions, impacts would be Class II, *significant but mitigable.*

Impact HWQ-2 **Development resulting from the Agricultural Cluster Subdivision Program could alter drainage conditions. These altered drainage conditions could result in physical effects on down-gradient properties. Impacts compared to both the existing ordinance and existing conditions would be Class III, *less than significant*.**

Compared to Development Potential under Existing Ordinance

When compared to development potential under the existing ordinance, the proposed amendments would reduce the number of residential cluster parcels that could potentially be created in the county from 4,582 to 418, a 91 percent reduction. The program would also introduce the Agricultural Cluster Subdivision Program into the Coastal Zone; however, the coastal version of the program would only authorize the reconfiguration of existing underlying lots into residential cluster lots, essentially replacing current lot line adjustment procedures with more restrictive agricultural clustering standards.

The proposed amendments would result in an overall reduction in the amount of land where drainage conditions could be altered by individual projects. Nonetheless, it is not anticipated that this impact will differ between the existing ordinance and the proposed Agricultural Cluster Subdivision Program. In both cases, Drainage Plan review will occur to ensure against substantial drainage impacts on neighboring property owners.

Drainage Plan review is required for almost all projects. Only those projects which the ~~County Engineer~~Department of Public Works has identified as not posing substantial drainage risk are exempted from Drainage Plan review. Drainage Plan criteria and standards are established in both the Land Use Ordinance (Chapter 22.52) and the Coastal Zone Land Use Ordinance (Chapter 23.05) in order to ensure against any threats to life or property resulting from drainage alteration. In certain cases (e.g. steep slopes, close proximity to streams, etc.), the ~~County Engineer~~Department of Public Works may require that a licensed professional engineer prepare the drainage plan and/or drainage calculations. Drainage Plans will not be approved unless compliance with regulations can be demonstrated to the satisfaction of the ~~County Engineer~~Department of Public Works. Therefore, with implementation of existing standards, impacts under the existing ordinance would be Class III, *less than significant.*

Compared to Existing Conditions

The Agricultural Cluster Subdivision Program will allow clustering of residential development on agricultural lands. As a result, residential development will occur at a greater density over a

small portion of the site, with a much larger portion of the site being maintained in agricultural production or preserved as open space. Development on each of the clustered residential parcels is generally anticipated to include a single-family residence with ancillary uses (e.g. garage, workshop, guesthouse, etc.). Preparation of the land for development will generally require a County Grading Permit and drainage plan review.

The Agricultural Cluster Subdivision Program will have the effect of changing the manner in which residential development can occur on agricultural lands. Although the overall residential density will not be increased beyond what is already anticipated in the County General Plan, the ability to cluster the residences could affect overall drainage patterns. Increased volume or velocity, or change in direction of runoff could negatively impact down gradient landowners. For example, a change in direction and increase in velocity could create flooding problems where flooding has not historically been a problem. Changes in drainage patterns are particularly of concern in agricultural areas, where drainage alteration could affect agricultural production factors or damage valuable crops.

Drainage Plan review is required for almost all projects. Only those projects which the ~~County Engineer~~Department of Public Works has identified as not posing substantial drainage risk are exempted from Drainage Plan review. Drainage Plan criteria and standards are established in both the Land Use Ordinance (Chapter 22.52) and the Coastal Zone Land Use Ordinance (Chapter 23.05) in order to ensure against any threats to life or property resulting from drainage alteration. In certain cases (e.g. steep slopes, close proximity to streams, etc.), the ~~County Engineer~~Department of Public Works may require that a licensed professional engineer prepare the drainage plan and/or drainage calculations. Drainage Plans will not be approved unless compliance with regulations can be demonstrated to the satisfaction of the ~~County Engineer~~Department of Public Works. Therefore, with implementation of existing standards, impacts under the existing ordinance would be Class III, *less than significant.*

Mitigation Measures. Drainage impacts are already addressed through the County's Drainage Plan review process in accordance with Land Use Ordinance Chapter 22.52 / Coastal Zone Land Use Ordinance Chapter 23.05). No mitigation measures are required.

Residual Impacts. Impacts compared to both the existing ordinance and existing conditions would be Class III, *less than significant.*

Impact HWQ-3 **Development resulting from the Agricultural Cluster Subdivision Program could cause erosion and ultimately lead to sedimentation of water courses. Impacts compared to both the existing ordinance and existing conditions would be Class III, *less than significant*.**

Compared to Development Potential under Existing Ordinance

When compared to development potential under the existing ordinance, the proposed amendments would reduce the number of residential cluster parcels that could potentially be created in the county from 4,582 to 418, a 91 percent reduction. The program would also introduce the Agricultural Cluster Subdivision Program into the Coastal Zone; however, the coastal version of the program would only authorize the reconfiguration of existing underlying

lots into residential cluster lots, essentially replacing current lot line adjustment procedures with more restrictive agricultural clustering standards.
As a result, the program would reduce the potential for impacts related to sedimentation of water courses. Nonetheless, it is not anticipated that the level of this impact will differ between the existing ordinance and the proposed Agricultural Cluster Subdivision Program. In both cases, SWPPP and erosion and sedimentation control plan review will occur to ensure against substantial soil erosion or watercourse siltation. Therefore, with implementation of existing standards, impacts under the existing ordinance would be Class III, *less than significant.*

Compared to Existing Conditions

The Agricultural Cluster Subdivision Program will allow clustering of residential development on agricultural lands. As a result, residential development will occur at a greater density over a small portion of the site, with a much larger portion of the site being maintained in agricultural production or preserved as open space. Development on each of the clustered residential parcels is generally anticipated to include a single family residence with ancillary uses (e.g. garage, workshop, guesthouse, etc.). Preparation of the land for development will generally require a County Grading Permit and drainage plan review.

The Agricultural Cluster Subdivision Program will have the effect of changing the manner in which residential development can occur on agricultural lands. The overall residential density will not be increased beyond what is already anticipated in the County General Plan.

Erosion of soils can occur as a direct result of residential development, both during the construction and operational phase. During the construction phase, erosion can result once soils are de-vegetated and exposed. All grading and construction projects are required by default to prepare an erosion and sedimentation control plan and submit it to the County for review and approval prior to initiating site work. These plans require that Best Management Practices (BMPs) be implemented in order to reduce the potential for erosion to occur and to capture sediment before it can enter a watercourse. Some common erosion control BMPs include geotextiles, spreading of compost, and hydromulching; some common sediment control BMPs include sediment basins, fiber rolls, and filtration systems.

Erosion can also occur during the operational phase (after construction is complete), particularly on steep cut and fill slopes and in areas where revegetation is difficult to achieve. In addition to requiring short-term construction phase BMPs, County regulations also require long-term erosion control measures be put into place before final inspections and certificates of occupancy will be granted. As established in both the inland County grading ordinance and the State Water Resource Control Board's (SWRCB's) Construction General Permit, long-term erosion control is considered to be achieved when disturbed soils are revegetated to 70 percent of vegetative ground cover. Low Impact Development (LID) BMPs designed for stormwater quality control and filtration, such as bioswales, filtration strips, and retention grading, may also serve to provide long-term sedimentation control functionality.

In addition to undergoing County review for erosion and sedimentation control, projects which involve a greater amount of site disturbance or are located in areas with documented water quality problems are required to seek coverage under SWRCB's Construction General Permit. In order to obtain this coverage, the landowner must have a qualified individual prepare a

Stormwater Pollution Prevention Plan (SWPPP), which is submitted to both the State and County for review. SWPPPs include a site plan showing all BMPs, and a narrative discussion regarding the selection of BMPs, and why other BMPs were rejected. Depending upon site characteristics and designated risk level, the SWPPP may need to include a Rain Event Action Plan (REAP) – a contingency plan for "buttoning up" the site for storm events, inspection and monitoring procedures, sampling and testing procedures, and annual reporting. A qualified SWPPP practitioner is required to oversee implementation, inspection, and monitoring for the project until long-term measures have been implemented and coverage under the Construction General Permit is formally terminated. The practitioner is required to report all exceedences and violations to the SWRCB. As of May 2010, the County will also be assuming some review, approval, and enforcement responsibility for SWPPPs within the inland portion of the county. Penalties for stormwater violations can be extensive, including fines levied for violation of County regulations, violations of the State Water Quality Act (Porter-Cologne Act), and violations of the Federal Clean Water Act. Therefore, with implementation of existing standards, impacts compared to existing conditions would be Class III, *less than significant.*

Mitigation Measures. Erosion and sedimentation impacts are already addressed through the County's review of an erosion and sedimentation control plan. Additionally, both the County and State are involved in oversight of Stormwater Pollution Prevention Plans for larger projects. As a result, no further mitigation measures are required.

Residual Impacts. Impacts compared to both the existing ordinance and existing conditions would be Class III, *less than significant.*

Impact HWQ-4 **Design and location requirements established in the Agricultural Cluster Subdivision Program could result in residential development occurring in flood hazard areas. Compared to the existing ordinance, the program would reduce the potential to occur in flood hazard areas. Impacts compared to both the existing ordinance and existing conditions would be Class III, *less than significant.***

Compared to Development Potential under Existing Ordinance

When compared to development potential under the existing ordinance, the proposed amendments would reduce the number of residential cluster parcels that could potentially be created in the county from 4,582 to 418, a 91 percent reduction. The program would also introduce the Agricultural Cluster Subdivision Program into the Coastal Zone; however, the coastal version of the program would only authorize the reconfiguration of existing underlying lots into residential cluster lots, essentially replacing current lot line adjustment procedures with more restrictive agricultural clustering standards. As a result, when compared to the existing ordinance, the proposed amendments would reduce the likelihood for new residential development to be situated in flood hazard areas. Impacts compared to the existing ordinance would therefore be Class III, *less than significant.*

Compared to Existing Conditions

The Agricultural Cluster Subdivision Program will alter existing design standards for clustered residential development on agricultural land. The more restrictive design requirements proposed could have the potential result of forcing residential development to occur in flood hazard areas. These requirements include the following:

- *Buffers to be located on residential parcel*. Because buffers will be required to be located on the residential parcel, this will restrict areas where residential development can occur. Depending on site design, accommodating buffers could necessitate residential development in flood prone areas. This effect is lessened by another design provision enlarging the minimum residential parcel size from 10,000 square feet to 2.5 acres.
- *A single clustered envelope*. Rather than allowing residential cluster parcels to be scattered throughout a cattle ranch, the proposed Agricultural Cluster Subdivision Program would require that clustered parcels be physically contiguous and located in a single clustered envelope. The ordinance includes a provision to allow a second clustered envelope in the event that environmental conditions warrant an exception to this rule. Avoiding flood prone areas would likely be acceptable grounds for invoking this exception.

Impacts resulting from these additional requirements are not anticipated to rise to a level of significance. This circumstance exists for the following reasons:

- *Strong regulations ensure development in flood prone areas will not experience a significant impact.* When residential development occurs in flood prone areas identified in the County General Plan (i.e. assigned a "Flood Hazard [FH]" combining designation), they are subject to the special combining designation standards established in Chapter 22.14 of the Land Use Ordinance and Chapter 23.07 of the Coastal Zone Land Use Ordinance. These standards include a requirement that finish floor elevation be at least one foot above the 100-year flood elevation. Projects proposed in FH areas are required to submit an engineered Drainage Plan to the Department of Public Works for review and approval. The Drainage Plan will only be approved when the applicant can demonstrate compliance with FH requirements and compliance with drainage standards.
- *Avoidance of flood prone lands.* Avoiding locating development in flood prone areas has become a common sense practice in California. Existing state and federal policies strongly discourage development in flood plains. Moreover, independent real estate financers realize the increased risk with development in flood prone areas. Marketing homes in flood hazard areas is also made difficult by the high flood insurance premiums that owners must pay. As a result of this existing policy framework, development in flood prone areas is an uncommon occurrence.
- *Correlation between flood prone lands and prime farmland.* Most flood prone areas occurring along watercourses with wide flood plains contain alluvial soils. These alluvial soils generally possess characteristics of prime agricultural soils. The proposed agricultural cluster subdivision regulations would preclude residential development from occurring on prime farmland.

In summary, with implementation of existing standards, impacts compared to existing conditions would be Class III, *less than significant.*

Mitigation Measures. Flood hazard concerns are already addressed through the special standards established in Chapter 22.14 of the Land Use Ordinance and Chapter 23.07 of the Coastal Zone Land Use Ordinance. Additionally engineered Drainage Plan review and approval will be required for projects in flood prone areas. As these existing requirements will ensure against flood-related impacts, no further mitigation measures are required.

Residual Impacts. Impacts compared to both the existing ordinance and existing conditions would be Class III, *less than significant.*

Impact HWQ-5 **Residential development resulting from the Agricultural Cluster Subdivision Program could discharge both stormwater and non-stormwater pollutants into area watercourses. Impacts compared to both the existing ordinance and existing conditions would be Class III, *less than significant*.**

Compared to Development Potential under Existing Ordinance

As described above, the proposed amendments would result in a 91 percent reduction in overall development potential when compared to the existing ordinance. Nonetheless, it is not anticipated that this impact will differ between the existing ordinance and the proposed Agricultural Cluster Subdivision Program since construction-phase and post-construction stormwater regulations apply presently to agricultural cluster subdivisions being processed under the existing inland ordinance. Revisions proposed as part of the Agricultural Cluster Subdivision Program will not have a direct effect on the application of these regulations. Therefore, it is anticipated that the revisions to the ordinance will have a negligible change in pollutant discharges when compared to the existing ordinance because any possible effect will be addressed by existing regulations, including: Stormwater Pollution Prevention Plan (SWPPP) review and Stormwater Management regulations in Chapter 22.10 of the County Land Use Ordinance. Impacts would therefore be Class III, *less than significant.*

Compared to Existing Conditions

Residential development is associated with discharges of pollutants both during the construction and operational phase of the use. The proposed Agricultural Cluster Subdivision Program will allow certain restricted residential development to occur on agricultural lands near existing communities, and within the Coastal Zone on land with underlying legal lots. This residential development could result in both stormwater and non-stormwater pollutant discharges into watercourses.

Stormwater discharges are discharges carried to a watercourse by stormwater. The most common example of a stormwater discharge is eroded soil carried into a watercourse, resulting in sedimentation. Other examples could include stormwater infiltrating areas where pollutants are stored, such as paint, oil, gasoline, or solvents. Non-stormwater discharges are discharges to a watercourse by means other than stormwater. Common examples of non-stormwater discharges include chlorine-laden pool water, soaps and solvents (e.g. from washing a car), pet wastes, oils, greases, paints, and other pollutants inappropriately discharged into the stormwater conveyance system.

These discharges could potential impair the local watercourse or its distributaries. In cases where a watercourse is listed on the impaired watercourse list (see Table 4.7-1), additional pollutants could be considered a significant impact, and would also likely violate Clean Water Act provisions for watercourses with established Total Maximum Daily Loads (TMDLs).

Stormwater-based discharges are generally handled as follows:

- Larger construction projects, which would cumulatively disturb more than one acre or would discharge to an impaired water course are subject to preparation of a SWPPP, unless otherwise exempted by the State Water Resources Control Board (SWRCB). SWPPPs are required to address both stormwater and non-stormwater pollutants associated with construction of the project (e.g. construction-phase discharges).
- Discretionary projects where the operation of the use could result in substantial discharge of pollutants (i.e. "post-construction" discharges) are subject to the Stormwater Management regulations in Chapter 22.10 of the Land Use Ordinance. Coastal Zone Land Use Ordinance provisions are pending action by the Coastal Commission. The Stormwater Management regulations apply to certain uses where pollutant discharge is to be anticipated. For example, agricultural cluster subdivision projects resulting in the development of 10 residential units or development of residences on slopes exceeding 10 percent will be required to comply with this ordinance. Projects subject to this ordinance must complete a Stormwater Quality Plan (SWQP), identify source control and/or treatment control Best Management Practices (BMPs), and develop a long-term maintenance program.
- Smaller projects which do not trigger the construction phase requirements (e.g. SWPPP) or the post-construction requirements (e.g. SWQP) are assumed to fall below a threshold of significance for stormwater and non-stormwater discharges.[2] Nevertheless, these projects are still required to submit an erosion and sedimentation control plan for County review and approval.
- The County is required by its Stormwater Management Program (SWMP) to adopt an illicit discharge ordinance~~, and such adoption must be done by March 2012 at~~ Title 8.68 of the County Code contains the latest illicit discharge ordinance~~(i.e. expiration of the SWMP)~~. ~~The County has recently released a Notice of Preparation (NOP) for an Environmental Impact Report (EIR) on the illicit discharge ordinance. Once adopted, the illicit discharge ordinance will regulate non-stormwater discharges and will establish penalties for violation.~~

Therefore, with implementation of existing discharge regulations, impacts compared to existing conditions would be Class III, *less than significant.*

Mitigation Measures. Stormwater discharges are addressed through the SWPPP and SWQP requirements. The County is also required, and has committed, to adopt an illicit discharge ordinance to address non-stormwater discharges, and this ordinance is presently

[2] SWPPP and SWQP requirements originate from the Federal National Pollution Discharge Elimination System (NPDES) and are intended to reduce environmental impacts associated with stormwater and non-stormwater discharges on the national level. Therefore, projects, which, due to their unique site characteristics and minimal area of disturbance, would not trigger the need for a SWPPP or SWQP are presumed under Federal regulations to have a de-minimum impact related to stormwater and non-stormwater discharge.

undergoing environmental review pursuant to the California Environmental Quality Act (CEQA). These regulations will address pollutant discharges into watercourses as a result of both construction-phase and operational (i.e. post-construction) use. Therefore, no further mitigation measures are necessary.

Residual Impacts. Impacts compared to both the existing ordinance and existing conditions would be Class III, *less than significant*.

Impact HWQ-6 **The Agricultural Cluster Subdivision Program will require active agricultural production in order to qualify for subdivision. This may incentivize expansion of agricultural production. Agricultural uses can result in this discharge of pollutants into watercourses. Impacts compared to both the existing ordinance and existing conditions would be Class III, *less than significant*.**

Compared to Development Potential under Existing Ordinance

Agricultural uses are associated with discharges of pollutants associated with sediment, fertilizers, and pesticides. As a result, many watercourses in intensively farmed areas exceed Clean Water Act standards for agriculturally related pollutants (refer to Table 4.7-1). Expansion of agriculture resulting from the Agricultural Cluster Subdivision Program could potentially result in additional discharge of pollutants. In areas where watercourses are already impaired, any additional discharge may be considered significant.

Just as construction-based uses are required to seek NPDES permit coverage (i.e. by way of the SWRCB Construction General Permit), agricultural uses are likewise required to comply with NPDES. Presently, grazing and non-irrigated crop production uses are exempted from NPDES regulations, because these uses are less often correlated with pollutant discharge. Irrigated agricultural uses are required to obtain NPDES permit coverage or adhere to the conditional waiver for irrigated agricultural lands. The conditional waiver mirrors many of the requirements of the Construction General Permit. For example, agriculturalists are required to prepare a Farm Plan establishing Best Management Practices (BMPs) to avoid pollutant discharges. Additionally, agriculturalists must attend water quality seminars and form monitoring organizations to cooperatively monitor BMPs for effectiveness. The desired result of the conditional waiver program is to minimize discharge of pollutants into local watercourses. The continuing implementation of this program and successor programs ensures that impacts from agricultural production are at a Class III, *less-than-significant*, level.

Compared to Existing Conditions

Under the existing ordinance, the base density for an agricultural cluster subdivision could be determined by either one of two tests:

- *The Use Test.* The use test establishes a minimum parcel size based on the historic agricultural use of the property. Intensively farmed irrigated row crops may command a smaller minimum parcel size of 20 to 40 acres, while rangeland may require a larger minimum parcel size of 320 acres.

- *The Capability Test.* The capability test considers the ability of the land to sustain intensive farming. The capability test relies on Natural Resources Conservation Service (NRCS) designated soil classes. Class I and II soils may qualify for a minimum parcel size of 20 acres, while poor soils may necessitate a minimum parcel size of 320 acres.

With standard subdivisions, the applicant is able to choose which test to base the subdivision minimum parcel sizes on. The proposed Agricultural Cluster Subdivision Program would require that cluster subdivisions be based only on the use test. This means that land with highly productive soils would have to actually establish and maintain an agricultural use in order to qualify for clustered subdivision. This creates a potential incentive for landowners to expand or intensify production in order to qualify for additional residential parcels.

In summary, the present inland agricultural cluster subdivision ordinance allows qualification for subdivision based on either the use or capability test. The proposed Agricultural Cluster Subdivision Program would restrict this by requiring qualification based on the use test only. This would potentially result in intensification or expansion of agricultural uses. Intensification or expansion of agriculture could, in turn, result in additional discharge of agriculturally related pollutants. As such, it can be anticipated that the Agricultural Cluster Subdivision Program could result in additional discharge of pollutants from agricultural operations. Agricultural pollutant discharge is already addressed through the State Water Resources Control Board's (SWRCB's) conditional waiver for irrigated agricultural lands (also commonly referred to as the "irrigated agricultural discharge waiver"). Therefore, with implementation of existing SWRCB requirements addressing agricultural pollutants, impacts compared to both the existing ordinance and existing conditions would be Class III, *less than significant*.

Mitigation Measures. Discharges of agriculturally related pollutants are already regulated by the SWRCB through the irrigated agricultural discharge waiver[3]. No further mitigation measures are necessary.

Residual Impacts. Impacts compared to both the existing ordinance and existing conditions would be Class III, *less than significant.*

c. Cumulative Impacts. This section describes the cumulative impacts of the proposed Agricultural Cluster Subdivision Program compared to development potential under both the exiting ordinance and existing conditions. The geographic scope for the hydrology and water quality cumulative analysis includes agricultural and rural areas within five miles of the identified URLs and eligible areas of the Coastal Zone (the rural North Coast and Estero planning areas, not including Hearst Ranch).

Future development in accordance with the proposed Agricultural Cluster Subdivision Program could result in changes in drainage patterns, drainage conditions, and discharge of

[3] Despite the nomenclature, the "irrigated agricultural discharge waiver program" is actually a regulatory order issued by the Regional Water Quality Control Board (Order Number R3-2004-0117). The waiver is *conditional* in nature. In order to qualify for waiver from a general or site-specific National Pollutant Discharge Elimination System (NPDES) permit, agriculturalists must enroll in the waiver program. The program requires that enrollees cooperatively monitor and inspect Best Management Practices and report on compliance. Enrollees are also required to maintain a farm or ranch management plan and attend water quality training. Requirements of the irrigated agricultural discharge waiver program are comparable to the requirements of a Stormwater Pollution Prevention Plan.

stormwater and non-stormwater pollutants. Existing policies and programs are already in place to address these changes on a case-by-case basis. These include County requirements for drainage plan and erosion and sedimentation control plan review, and State-level oversight afforded through the NPDES permitting process. Additionally, through the CEQA review process, projects will be reviewed to ensure appropriate LID measures and techniques have been incorporated to void hydromodification impacts. As a result, the cumulative impact resulting from the Agricultural Cluster Subdivision Program would not be expected to be cumulatively significant.